

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
REAL TIME DATA SYSTEM, ITEM 174 ----- SV791230-2 (1)	2/1RB	174FM02 Short circuit (within box after current limiting resistor). Electrical short in the wiring or electronic component.	END ITEM: Additional current draw (0.64 amps) from EMU battery during EVA. GFE INTERFACE: Loss of output from RTDS. Additional current draw is not sufficient to cause DCM shutdown. All other systems would operate normally. MISSION: EVA mission shortened due to additional current draw and premature depletion of battery. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE: Minutes. TIME REQUIRED: Minutes. REDUNDANCY SCREENS: A-PASS B-FAIL C-PASS	A. Design - All internal wires are Teflon insulated (M22759/11) and wire lengths are kept to a minimum to reduce the possibility of being pinched during assembly of the unit. The electronic circuitry and components are conformal coated (Dow Corning RTV3140, MIL-A-46146) which prevents shorts due to direct electrical contact with foreign objects and prevents shorts due to contamination or moisture. Electrical connectors are environmentally sealed to prevent shorts due to humidity and contamination. B. Test - Component Acceptance Test - Testing includes functional, insulation resistance, and vibration tests which would detect the noted failure. Proper operation of the RTDS is also verified during PLSS PDA electrical tests. PDA Test - Continuity and functional per SEMU-60-010, Para. 7 and 8. Certification Test - Certified for a useful life of 20 years (Ref. EMUM1-0244). C. Inspection - Each circuit board, the wiring, and connectors are inspected for damage and contamination prior to being placed into finished stores. The RTDS is inspected internally and externally during assembly and externally during ATP for damage and contamination. D. Failure History - None. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Real Time Data System (RTDS). FEMU-R-001. Para. 8.2, EMU Pre-flight KSC Checkout for EET processing. F. Operational Use - Crew Response - PreEVA/PostEVA: Trouble shoot problem. If no success, consider third EMU if available. Otherwise, continue EVA prep. EVA: For single failure, no constraints. Training - Standard training covers this failure mode. Operational Considerations - EVA checklist procedures verify hardware integrity and system operational status prior to EVA. Flight rules require EVA termination when minimum primary consumables remain.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-174 REAL TIME DATA SYSTEM
CRITICAL ITEM LIST (CIL)
EMU CONTRACT NO. NAS 9-97150

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